NOVEMBER/DECEMBER 2023

CCA53/CCS53 — DESIGN AND ANALYSIS OF ALGORITHMS

Time : Three hours Maximum : 75 marks

LIBRARY

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Why is the need of studying algorithms?
2. What is the formula used in Euclid's algorithm for finding the greatest common divisor of two numbers?
3. Which algorithm uses divide-and-conquer?
4. What is the order of selection sort?
5. Define Job Sequencing.
6. Write any two advantages of Prim's algorithm.
7. Define Shortest path.
8. List any two advantages of BFS.
9. What is Hamiltonian cycles?
10. Define FIFO.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write a detailed note on algorithm specification.

Or

(b) Give a brief note on randomized algorithms.

12. (a) What is binary search? Discuss with examples.

Or

(b) Elaborate on worst case optimal algorithm.

13. (a) Explain about tree vertex spliting.

Or

(b) Discuss on single source shortest paths.

14. (a) Explain about branch and bound.

Or

(b) Describe about the backtracking.

15. (a) Summarize on graph coloring.

Or

(b) Discuss on LC branch and bound.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain Asymptotic Notation.

17. Elaborate Quick Sort with an example.

18. Discuss on Knapsack Problem with an example.

19. Write a detailed note on 0/1 knapsack.

20. Explain FIFO branch and bound.

LIBRARY